

A new species of *Amblyseius* Berlese (Acari: Phytoseiidae) from Brazil

Phytoseiid mites have received considerable world wide attention because of their potential as natural enemies of phytophagous mites (McMurtry, 1984). The *Amblyseius obtusus* group Chant is the largest species group in the genus *Amblyseius*. Chant & McMurtry (2004) divided the group into seven subgroups based on spermathecal morphology. The *andersoni* subgroup of Chant & McMurtry, 2004 is characterized by a spermatheca with the calyx dish-, cup-, bell-, or V-shaped, with the length/width ratio at the mid-point of the calyx < 3:1. A total of 24 species of the *andersoni* subgroup are known from the Neotropical region, 13 of these from Brazil (Moraes *et al.*, 2004). A new species of this subgroup, *Amblyseius paulofariensis* **sp. nov.**, is described and illustrated in this paper, from specimens collected in the semi-deciduous forest area of “Estação Ecológica de Paulo de Faria”, a protected natural area in the State of São Paulo, southeastern Brazil, on three species of Euphorbiaceae: *Acalypha diversifolia* Jacq., *Actinostemon communis* (Müll. Arg.) and *Alchornea glandulosa* Poepp. & Endl.. In the region where this mites was found, the climate is of the type Cwa-Aw of Köppen, with two distinct seasons: one wet, from October to March, and the other dry, from April to September. The annual mean temperature is 25°C, with a maximum mean of 30°C and a minimum mean of 20°C (Barcha & Arid, 1971; Arid & Barcha, 1973).

Dorsal and ventral setal nomenclature is that of Rowell *et al.* (1978) and Chant & Yoshida-Shaul (1991), respectively. All measurements are given in micrometres (µm). The holotype measurements are shown in bold type followed by the mean and range in parentheses. The type specimens are deposited in the collection of Acari, Departamento de Zoologia e Botânica, Universidade Estadual Paulista (UNESP), São José do Rio Preto, State of São Paulo, Brazil (DZSJRP, <http://www.splink.cria.org.br>).

Amblyseius paulofariensis **sp. nov.** (Figs 1–7)

Material Examined. Holotype female, from *Acalypha diversifolia* Jacq. (Euphorbiaceae), April 14, 2003, “Estação Ecológica de Paulo de Faria”, State of São Paulo, Brazil, 19°55’S, 49°31’W, R. Buosi coll. Paratypes: 3 females, 3 males from *A. diversifolia*, April 14, 2003; 4 females and 2 males from *Actinostemon communis* (Müll. Arg.) (Euphorbiaceae), May 30, 2003; 2 females from *Alchornea glandulosa* Poepp. & Endl. (Euphorbiaceae), June 27, 2003. All paratypes from the same locality and collector as the holotype.

Diagnosis. Females of this species differ from other species of the *andersoni* subgroup found in the Neotropical region (except *Amblyseius similicaudalis* Karg and *A. sylvestris* Denmark & Muma) by having setae JV2, ZV2 and ZV3 transversally aligned. It differs from *A. similicaudalis* and *A. sylvestris* by the shorter length of setae s4 and Z4, and by the shape of the spermatheca. *Amblyseius paulofariensis* **sp. nov.** most closely resembles *A. igarassuensis* Gondim Jr. & Moraes, mainly in the shape of the spermatheca, but differs by having setae Z5 relatively shorter, the ventri-anal shield of the female pentagonal, wider than that of *A. igarassuensis*, and the dorsal shield slightly striated in the anterolateral region.

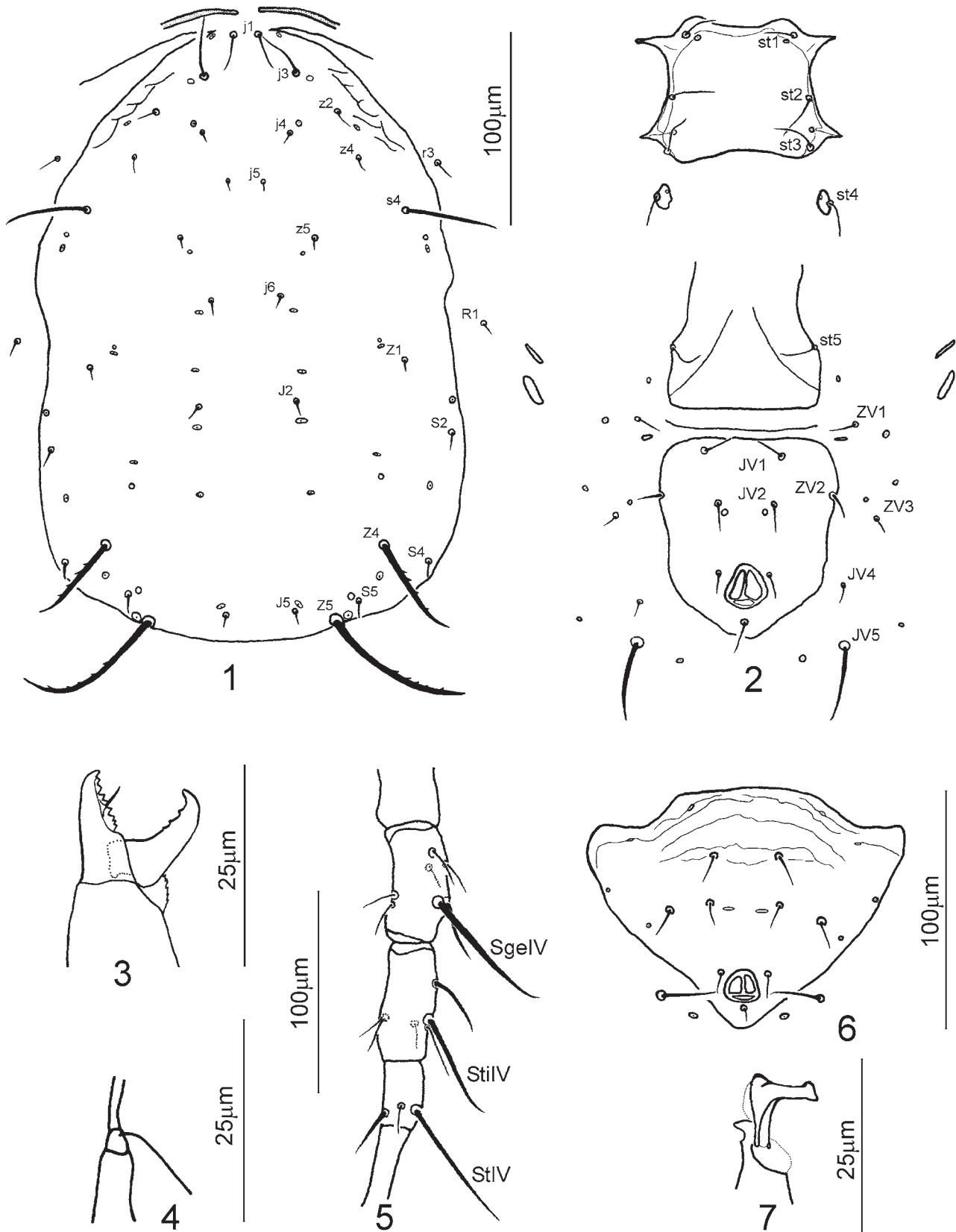
Description. *Female* (Figs 1–5) (10 specimens measured).

Dorsum (Fig. 1). Dorsal shield smooth, with a few striae anterolaterally, **317**: 312 (296–326) long, **196**: 199 (194–204) wide at level of s4; setae: j1 **18**: 19 (17–20), j3 **33**: 33 (30–36), j4 **6**: 6 (5–7), j5 **6**: 6 (5–6), j6 **7**: 7 (6–7), J2 **8**: 9 (8–10), J5 **6**: 7 (6–9), z2 **10**: 11 (9–13), z4 **7**: 9 (7–10), z5 **6**: 6 (5–7), Z1 **9**: 9 (8–10), Z4 **54**: 52 (48–56), Z5 **79**: 81 (75–87), s4 **46**: 47 (41–52), S2 **11**: 11 (9–12), S4 **12**: 12 (11–13), S5 **12**: 12 (11–14), r3 **11**: 11 (10–12), R1 **8**: 9 (8–10). All setae smooth, except Z4 and Z5 which are serrated.

Peritreme. Extending forward to the level of j1.

Venter (Fig. 2). Sternal shield smooth, with three pairs of setae and two pairs of lyrifissures; distance between st1–st3 **58**: 59 (57–61) and between st2–st2 **67**: 67 (64–71). Genital shield smooth, distance between st5–st5 **68**: 67 (64–69). Ventri-anal shield smooth, nearly pentagonal, with lateral margins slightly concave posterior to ZV2; with three pairs of

pre-anal setae and a pair of pores posterior to JV2; **103**: 104 (97–110) long, **90**: 87 (84–90) wide at level of ZV2, **73**: 76 (71–80) wide at level of anus. Setae ZV1, ZV3 and JV4 on integument surrounding ventri-anal shield. Setae JV5 smooth; **41**: 43 (37–49) long.



FIGURES 1–7. *Amblyseius paulofariensis* **sp. nov.** 1–5. Female. 1. Dorsal shield, 2. Ventral idiosoma, 3. Chelicera, 4. Spermatheca, 5. Leg IV (genu, tibia and basitarsus). 6–7. Male. 6. Ventri-anal shield, 7. Chelicera.

Chelicera (Fig. 3). Movable digit **28**: 28 (27–29) with three teeth, fixed digit **24**: 25 (23–26) with 8–10 teeth.

Spermatheca (Fig. 4). Cervix tubular; **7**: 8 (7–9) long.

Legs (Fig. 5). With setaceous macrosetae of the following lengths: Sge I **29**: 31 (29–33), Sge II **26**: 29 (26–31), Sge III **34**: 32 (29–34), Sti III **24**: 24 (22–27), Sge IV **53**: 53 (51–55), Sti IV **38**: 40 (38–43), St IV **51**: 52 (48–56). Chaetotactic formula of genu II: 2-2/0-2/0-1 and genu III: 1-2/1-2/0-1.

Male (Figs 6 and 7) (5 specimens measured).

Dorsum. Dorsal shield smooth, with a few striae anterolaterally, 236 (231–240) long, 170 (166–171) wide at level of s4; setae: j1 17 (14–19), j3 26 (24–28), j4 6 (5–6), j5 5 (5), j6 6 (6–7), J2 9 (8–9), J5 6 (6–7), z2 9 (8–9), z4 9 (8–9), z5 5 (5), Z1 7 (7–8), Z4 37 (34–41), Z5 60 (56–64), s4 30 (28–32), S2 10 (9–11), S4 11 (11), S5 11 (10–11), r3 11 (11), R1 9 (8–10). All setae smooth, except Z4 and Z5 which are serrated.

Peritreme. Extending forward to the level of j1.

Venter (Fig. 6). Sternogenital shield smooth; ventri-anal shield subtriangular, mostly smooth, striated from anterior extremity to level of JV1; 99 (95–103) long and 131 (125–136) wide at anterior corners, with three pairs of pre-anal setae, one distinct pair of pores posterior and mediat to bases of JV2, and four other smaller pairs of lyrifissures.

Spermadactyl (Fig. 7). Shaft 15 (14–16) long.

Legs. With setaceous macrosetae of the following lengths: Sge I 24 (23–26), Sge II 24 (22–25), Sge III 24 (21–25), Sti III 20 (18–21), Sge IV 34 (31–36), Sti IV 28 (26–32), St IV 45 (41–47). Chaetotactic formula of genu II and genu III as in females.

Etymology. The specific name refers to the type locality “Estação Ecológica de Paulo de Faria”, a protected natural area in the northwest of São Paulo State, Brazil.

Remarks. *Amblyseius paulofariensis* **sp. nov.** was the most abundant species of Phytoseiidae on *A. diversifolia* and *A. communis*, representing 35% and 44% of all the Phytoseiidae collected on those hosts respectively (Feres *et al.*, unpublished data). Since this is such an abundant species, studies should be conducted to evaluate its predatory potential for control of pest mites of agriculture. The “Estação Ecológica de Paulo de Faria” is an area of great ecological importance, being the largest protected natural area of the northwest of State of São Paulo, considering that this region possesses only 3% of the original natural vegetation.

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